CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board
Division of Drinking Water

March 10, 2017

System No.: 2410302

Ms. Sandy Von Herrmann, Administrative Officer III
22708 Broadway Street
Columbia, CA 95310

RE: CITATION NO. 03-11-17C-015, Source Flow Meter

Enclosed is a Citation issued to the California Department of Parks and Recreation - Hatfield (hereinafter "Water System") public water system.

The Water System will be billed at the State Water Resources Control Board's (hereinafter "State Board") hourly rate (currently estimated at $161.00) for the time spent on issuing this Citation. California Health and Safety Code, Section 116577, provides that a public water system must reimburse the State Board for actual costs incurred by the State Board for specified enforcement actions, including but not limited to, preparing, issuing and monitoring compliance with a citation. At this time, the State Board has spent approximately 2.0 hour(s) on enforcement activities associated with this violation.

The Water System will receive a bill sent from the State Board in August of the next fiscal year. This bill will contain fees for any enforcement time spent on the District for the current fiscal year.

If you have any questions regarding this matter, please contact Christopher Barber of my staff at 559-447-3300 or me at 559-447-3316.

Sincerely,

Kassy D. Chauhan

Kassy D. Chauhan, P.E.
Senior Sanitary Engineer, Merced District
Central California Section
SOUTHERN CALIFORNIA BRANCH
DRINKING WATER FIELD OPERATIONS

Enclosures
Certified Mail No.: 7016 1370 0000 0455 3239

cc: Mr. Craig Hackett, Chief Operator
Merced County Environmental Health Department

Citation No. 03-11-17C-015

STATE OF CALIFORNIA
WATER RESOURCES CONTROL BOARD
DIVISION OF DRINKING WATER

IN RE: **CDPR - HATFIELD**
WATER SYSTEM NO. 2410302

TO: Ms. Sandy Von Herrmann, Admin Officer III
22708 Broadway Street
Columbia, CA 95310

CC: Mr. Craig Hackett, Chief Operator
31426 Gonzaga Road
Gustine, CA 95322

Merced County Environmental Health Department

CITATION FOR VIOLATION OF
CALIFORNIA CODE OF REGULATIONS, TITLE 22, SECTION 64561
Source Flow Meters

Issued on March 10, 2017

Section 116650 of the California Health and Safety Code authorizes the issuance of a citation to a public water system for violation of the California Safe Drinking Water Act (Health and Safety Code, Division 104, Part 12, Chapter 4, commencing with Section 116270) (hereinafter "California SDWA"), or any regulation, standard, permit or order issued or adopted thereunder.

The State Water Resources Control Board (hereinafter "Board"), acting by and through its Division of Drinking Water (hereinafter "Division") and the Deputy Director for the Division (hereinafter "Deputy Director"), hereby issues a citation to the California Department of Parks and Recreation - Hatfield Water System (hereinafter "Water System") (31426 W. Highway 152, Santa Nella, CA 95322) for violation of California Code of Regulations (CCR), Title 22, Section 64561.

APPLICABLE AUTHORITIES

The applicable statutes and regulations are provided in Appendix A, attached hereto and incorporated by reference.

STATEMENT OF FACTS

The Water System is a transient-noncommunity water system serving a transient population of approximately 350 persons per day through sixteen (16) service connections. Effective April 1, 2014, the Merced County Department of Environmental Health transferred the jurisdictional regulatory oversight for this water system to the Division. The Water System currently operates under a water supply permit (No. 03-11-13P-026) issued by the Division on November 6, 2013 (Appendix B).

The Division conducted a sanitary survey of the Water System on September 24, 2013, and observed that a flow meter was not installed on the discharge piping from Hatfield State Park Well (2410302-001). The Division noted the need to install a totalizing flow meter at a point between the source and the entry point to the distribution system and submit photo documentation to the Division by December 31, 2013. In addition, the System was required to begin recording monthly well production quantities on at least a monthly basis and reporting those quantities to the Division annually via the electronic Annual Report to the Drinking Water Program (e-ARDWP). Despite the Division's efforts to inform the Water System of the requirements to install a flow meter and record the total monthly water production, the Water System has failed to install the flow meter and begin reporting the monthly production from the Hatfield State Park Well annually to the Division.

DETERMINATION

Title 22, CCR, Section 64561, Source Flow Meters provides that each water system shall install a flow meter at a location between each water source and the entry point to the distribution system and meter the quantity of water flow from each source, and record the total monthly production each month.

The Division has determined that the Water System failed to comply with Title 22, CCR, Section 64561, Source Flow Meters by failing to install a flow meter at the Hatfield State Park Well and for failure to meter the quantity of water flow from each source and record the total monthly production each month.

ADMINISTRATIVE PENALTIES

Pursuant to CHSC Section 116650

Sections 116650(a) of the CHSC allows for the issuance of a citation for failure to comply with the requirements of the California Safe Drinking Water Act, or any regulation, permit, standard, citation, or order issued thereunder. Section 116650(d) and (e) allow for the assessment of a penalty not to exceed one thousand dollars ($1,000) per day for each day that a violation occurs.

Despite the Division's efforts to work with the Water System, the Water System has failed to comply with Section 64561. Therefore, the Division hearby assesses an administrative penalty of one thousand and five hundred dollars ($1,500) upon Water System. Directive No. 5 below describes the requirements for payment of the Penalty and conditions under which the Division may waive the requirement to pay the penalty.

DIRECTIVES

The Water System is hereby directed to take the following actions:

1. On or before March 31, 2017, submit a written response to the Division indicating its willingness to comply with the directives of this citation.

2. On or before May 31, 2017, install a source flow meter on the Hatfield State Park Well at a point between the source and the entry point to the distribution system per Section 64561.

3. On or before May 31, 2017, submit photo documentation to the Division showing the installation of the flow meter on the Hatfield State Park Well at a point between the source and the entry point to the distribution system in accordance with Section 64561.

4. Beginning in June 2017 or before, record the total production from each active source a minimum of monthly and report the total monthly production to the Division annually via the Electronic Annual Report.

5. Pay the Penalty of one thousand and five hundred dollars ($1,500) within 90 days of the receipt of this Citation. Payment shall be made payable to the State Water Resources Control Board – Division of Drinking Water. Further instruction on the payment is provided in Appendix C, Notice of Citation Issuance.

   If the Water System complies with Directives 1, 2, 3, and 4 before the Penalty becomes due, and upon written request from the Water System, the Division will *consider*, at its sole discretion, terminating the requirement to pay the penalty.

6. If the Water System is unable to perform the tasks specified in this citation for any reason, whether within or beyond its control, and if the Water System notifies the

Division in writing no less than five days in advance of the due date, the Division may extend the time for performance if the Water System demonstrates that it has used its best efforts to comply with the schedule and other requirements of this citation.

The Division reserves the right to make such modifications to the Citation as it may deem necessary to protect public health and safety. Such modifications may be issued as amendments to this Citation and shall be effective upon issuance.

Nothing in this Citation relieves the Water System of its obligation to meet the requirements of the California Safe Drinking Water Act or any regulation, standard, permit or order issued thereunder.

All submittal required by this Citation shall be submitted to the Division at the following address:

Kassy D. Chauhan, P.E.
Senior Sanitary Engineer
State Water Resources Control Board
Division of Drinking Water
265 W. Bullard Avenue, Suite 101
Fresno, CA 93704

PARTIES BOUND

This Citation shall apply to and be binding upon the CDPR - Hatfield Water System, its officers, directors, agents, employees, contractors, successors, and assignees.

SEVERABILITY

The Directives of this Citation are severable, and the Water System shall comply with each and every provision thereof notwithstanding the effectiveness of any provision.

FURTHER ENFORCEMENT ACTION

The California SDWA authorizes the Board to: issue citation with assessment of administrative penalties to a public water system for violation or continued violation of the requirements of the California SDWA or any permit, regulation or order issued or adopted thereunder including, but not limited to, failure to correct a violation identified in a citation or compliance order. The California SDWA also authorizes the Board to take action to suspend or revoke a permit that has been issued to a public water system if the system has violated applicable law or regulations or has failed to comply with an order of the Board; and to petition the superior court to take various enforcement measures against a public water system that has failed to comply with an order of the Board. The Board does not waive any further enforcement action by issuance of this citation.

3-10-2017
Date

Carl L. Carlucci, P.E.
Supervising Senior Sanitary Engineer,
Central California Region
DRINKING WATER FIELD OPERATIONS BRANCH

CERTIFIED NO.: 7016 1370 0000 0455 3239

CLC/KDC/Citation/no flow meter

Appendices:
Appendix A: Applicable Authorities
Appendix B: Water Supply Permit No. 03-11-13P-026
Appendix C: Notice of Citation Issuance

APPENDIX A

Applicable Statues and Regulations for Citation No. 03-12-17C-XXX

Section 116650 of the CHSC states in relevant part:
§116650. Citations

(a) If the Division determines that a public water system is in violation of this chapter or any regulation, permit, standard, citation, or order issued or adopted thereunder, the Division may issue a citation to the public water system. The citation shall be served upon the public water system personally or by certified mail. Service shall be deemed effective as of the date of personal service or the date of receipt of the certified mail. If a person to whom a citation is directed refuses to accept delivery of the certified mail, the date of service shall be deemed to be the date of mailing.

(b) Each citation shall be in writing and shall describe the nature of the violation or violations, including a reference to the statutory provision, standard, order, citation, permit, or regulation alleged to have been violated.

(c) A citation may specify a date for elimination or correction of the condition constituting the violation.

(d) A citation may include the assessment of a penalty as specified in subdivision (e).

(e) The Division may assess a penalty in an amount not to exceed one thousand dollars ($1,000) per day for each day that a violation occurred, and for each day that a violation continues to occur. A separate penalty may be assessed for each violation.

Section 64561 of Title 22, California Code of Regulations states in relevant part:
§64561. Source Flow Meters.

Each water system shall:

(a) Except for inactive sources, install a flow meter at a location between each water source and the entry point to the distribution system;

(b) Meter the quantity of water flow from each source, and record the total monthly production each month.

State of California—Health and Human Services Agency
California Department of Public Health

RON CHAPMAN, MD, MPH
Director and State Health Officer

EDMUND G. BROWN JR.
Governor

November 6, 2013
System No.: 2410302

Craig Hackett, WSPS
CDPR – Hatfield State Recreation Area
31426 Gonzaga Road
Gustine, CA 95322

RE: Water Supply Permit No. 03-11-13P-026

The purpose of this letter is to inform you that the Department has issued a Revised Domestic Water Supply Permit for the CDPR – Hatfield State Recreation Area Water System. The Revised Domestic Water Supply Permit, Water Quality Monitoring Schedule and an Engineering Report are attached to this letter. Please review the engineering report and provide any comments or corrections to the Department in writing.

Please acknowledge in writing by November 22, 2013, receipt of this water supply permit, your willingness to comply with the permit provisions and any comments or corrections to the engineering report. This permit supersedes previous domestic water supply permit issued by the Department to the CDPR – Hatfield State Recreation Area Water system and contains an all-inclusive list of applicable special permit provisions. If you have any questions regarding this matter, please contact our office at (559) 447-3300.

Sincerely,

Carl L. Carlucci, P.E.
Supervising Sanitary Engineer
Central California Region
SOUTHERN CALIFORNIA BRANCH
DRINKING WATER FIELD OPERATIONS

Enclosures
Cc: Merced County Environmental Health Department (no attachments)
Greg Yanchus, CDPR (22708 Broadway St., Columbia, CA 95310)

CLC/mrw/2410302/transmittal letter.doc

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC HEALTH

Certificate of Issuance

OF A

WATER SUPPLY PERMIT

TO

CDPR – Hatfield State Recreation Area Water System

This is to certify that a water supply permit **03-11-13P-026** has been issued to CDPR – Hatfield State Recreation Area Water System on **November 6, 2013,** to supply water for domestic purposes to the CDPR – Hatfield State Recreation Area Water System. The permit was issued by the Department of Public Health, pursuant to the provisions of Division 104, Part 12, Chapter 4, Article 7, of the California Health and Safety Code. The permit is subject to the requirements of Title 22, California Code of Regulations, and to the conditions provided in the water supply permit.

A copy of the water supply permit is on file with the CDPR – Hatfield State Recreation Area Water System or may be obtained by contacting the Merced District Office of the Department of Public Health, Drinking Water Field Operations Branch, 265 W. Bullard Ave., Ste 101, Fresno, CA 93704.

Carl L. Carlucci, P.E., Supervising Sanitary Engineer

State of California—Health and Human Services Agency
California Department of Public Health

RON CHAPMAN, MD, MPH
Director & State Health Officer

EDMUND G. BROWN JR.
Governor

DOMESTIC WATER SUPPLY PERMIT ISSUED TO CALIFORNIA DEPARTMENT OF PARKS & RECREATION (CDPR) – HATFIELD STATE RECREATION AREA WATER SYSTEM
Water System No. 2410302

REVISED PERMIT NO.: *03-11-13P-026* EFFECTIVE DATE: November 6, 2013

WHEREAS:

1. The CDPR – Hatfield State Recreation Area (SRA) Water System was previously operated under a domestic water supply permit (Permit No. 03-88-030) that was issued by the Department in 1988 and contained no permit provisions. The purpose of this revised permit is to add provisions to the permit for the water system.

THEREFORE:

1. The California Department of Public Health (Department) hereby approves a Revised Domestic Water Supply Permit for the CDPR – Hatfield State Recreation Area Water System. A Revised Domestic Water Supply Permit is hereby issued to CDPR – Hatfield State Recreation Area to continue operation of the existing water system.

This permit is subject to the following conditions:

1. The permitted active source for the SRA is Hatfield State Park Well (PS Code 2410302-001). The Merced District Office of the Drinking Water Field Operations Branch (DWFOB) must permit all other sources before they can be used in the water system.
2. The Water System must comply with the attached water quality monitoring schedule for the Hatfield State Park Well. All water quality monitoring results obtained in a calendar month must be submitted to the Department via electronic data transfer (EDT) by the tenth day of the following month.
3. The SRA must install a flow meter on the Hatfield State Park Well before December 31, 2013. The SRA must also begin recording monthly production values from the Well and

submit them to the Department annually on the Annual Report to the Drinking Water Program.

4. The SRA must submit a Bacteriological Sample Siting Plan (BSSP) to the Department for review and approval by November 30, 2013. A guidance document is provided in Appendix D.

5. The SRA must submit an Emergency Chlorination Plan to the Department for review and approval by December 31, 2013. A guidance document is provided in Appendix E.

This permit supersedes all previous domestic water supply permits issued for this public water system and shall remain in effect unless and until it is amended, revised, reissued, or declared to be null and void by the California Department of Public Health. This permit is non-transferable. Should the CDPR – Hatfield State Recreation Area Water System undergo a change of ownership, the new owner must apply for and receive a new domestic water supply permit.

Any change in the source of water for the water system, any modification of the method of treatment as described in the Permit Report, or any addition of distribution system storage reservoirs shall not be made unless an application for such change is submitted to the California Department of Public Health.

This permit shall be effective as of the date shown below.

FOR THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

11-6-2013

Carl L. Carlucci, P.E.
Supervising Sanitary Engineer
Central California Region
Southern California Branch
Drinking Water Field Operations

CLC/mrw/2410302/2013 Revised Permit/water supply permit.doc

Engineering Report
For the Consideration of a Revised Permit for the
California Department of Parks & Recreation (CDPR) –
Hatfield State Recreation Area
System No. 2410302
Merced County
November 2013

California Department of Public Health
Southern California Branch
Drinking Water Field Operations
Maria R. Wieczorek, Environmental Scientist

I. INTRODUCTION

1.1 PURPOSE OF REPORT

The CDPR – Hatfield State Recreation Area (SRA) was previously operated under a domestic water supply permit (Permit No. 03-88-030) that was issued by the Department in October 1988 and contained no special provisions. The purpose of this report is to describe the current state of the water system and to make recommendations regarding the issuance of a revised domestic water supply permit.

1.2 DESCRIPTION OF SYSTEM

The SRA is located in Merced County. The SRA is classified as a transient noncommunity (TNC) water system. The SRA serves a transient population of up to 250 people through 11 service connections. The SRA features an employee residence (unoccupied), camping/picnic sites, maintenance shop, and public restrooms. There are no showers. The SRA uses septic tanks and leach fields for waste disposal.

The SRA water system consists of a well, an irrigation system, ten 40 gallon pressure tanks, and emergency chlorination equipment. No storage is provided.

1.3 SOURCES OF INFORMATION

Information for the preparation of this report was obtained from Craig Hackett, Chief Operator; system files from the Merced District Office of the Drinking Water Field Operations Branch (DWFOB); and a field inspection of the water system conducted on September 24, 2013.

The investigation, analysis, and preparation of this report were undertaken primarily by Maria R. Wieczorek, Environmental Scientist with the DWFOB in Fresno, California.

II. INVESTIGATION FINDINGS

2.1 GROUNDWATER SOURCE OF SUPPLY

Hatfield State Park Well (Active Untreated) PS Code 2410302-001

The Hatfield State Park Well was drilled in 1978 to a depth of 158 feet. The borehole contains a 10-inch diameter plastic casing to a depth of 158 feet. The casing is screened between 108 and 158 feet. A Well Driller's Report is on file with the Department. The well is gravel packed from 50 to 158 feet. A cement annular seal is present to a depth of 50 feet. The well is equipped with a 10-hp submersible pump. Production values are unknown. All sanitary setback requirements are met.

The well's appurtenances include a check valve, sample tap, emergency chlorination injection port, and a screened air relief/casing vent. No flow meter is provided. The well is enclosed in a locked building. The well discharges through ten 40 gallon pressure tanks. No backup power source is provided.

An old abandoned well is also present in a separate locked building. It has been filled with sand and is located about 30 feet from the active well. The well surface has been cemented. Also, a buried gasoline tank was located within 50 feet of the well, but it has been removed. The entire area is in a flood plain of the nearby Merced River.

2.2 ADEQUACY OF SUPPLY

The system uses the well regularly to meet system demand. Production values are unknown. No water outages have been reported to the Department.

The SRA is required to install a flow meter on the well by December 31, 2013. The SRA must begin recording production values on a monthly basis and report them annually on the electronic Annual Report to the Drinking Water Program.

2.3 TREATMENT

No treatment is currently provided. However, the system has emergency chlorination equipment onsite in the event of a bacteriological emergency. The SRA does not have an approved Emergency Chlorination Plan on file with the Department. The SRA must submit an Emergency Chlorination Plan to the Department by December 31, 2013. A guidance document is provided in Appendix E.

2.4 STORAGE

No sizeable amount of storage is provided. System pressure is provided by ten 40-gallon bladder tanks. Pressure settings are 35 psi (on) and 55 psi (off).

2.5 DISTRIBUTION SYSTEM

Water Mains

The distribution system encompasses one pressure zone. The system piping is comprised of 3-inch diameter asbestos-cement mains with 3/4-inch diameter service laterals.

System Flushing and Valve Exercising

There are 2 valves present in the system which are exercised on an annual basis. System flushing is done on an as needed basis.

System Repairs

CDPR is responsible for all system maintenance and repairs. When repairs take place, AWWA standards are followed. Special bacteriological samples are collected and submitted to the Department.

2.6 OPERATION AND MAINTENANCE

The SRA is owned and operated by CDPR. Craig Hackett is the chief operator for the system (T3/D3). The SRA is visited on a weekly basis by the operator. During each visit, the operator visually inspects the well and walks the system looking for any problems.

2.6.1 Cross-Connection Control Program

The SRA has 1 backflow device in the system. All backflow devices are required to be tested on an annual basis. The SRA must keep testing records on file for a minimum of 3 years.

2.6.2 Emergency Notification Plan

The SRA has an Emergency Notification Plan on file with the Department dated May 5, 2009. The Plan indicates the use of public posting and hand delivery in the event of a water quality emergency.

2.7 WATER QUALITY MONITORING

Groundwater

The SRA uses only groundwater as its source of supply.

2.7.1 Vulnerability Assessment for Sources

A source water assessment was completed for the Hatfield State Park Well in May 2003. The source is considered most vulnerable to the following activities associated with contaminants detected in the water supply:

- Historic waste dumps/landfills

The source is considered most vulnerable to the following activities not associated with any detected contaminants:

- Septic systems - low density [<1/acre]

2.7.2 General Mineral, Physical and Inorganic Chemicals

Water quality monitoring is dictated based upon what category a water system is classified as. The SRA is classified as a transient noncommunity water system that uses groundwater from valley areas. Hence, the SRA is required to follow this specific water quality monitoring schedule, which is appended in Appendix B. The Hatfield State Park Well produces water that meets all drinking water standards.

The SRA is required to sample for fluoride, a primary inorganic element, once throughout the lifetime of the water system. The Hatfield State Park Well was last sampled for fluoride in June 2006, thus the requirement has been satisfied.

The SRA is also required to sample its active well for general minerals and physical characteristics once throughout the lifetime of the water system. The Hatfield State Park Well was last sampled for these constituents in June 2006, respectively. Therefore the requirement for these constituents has been satisfied.

2.7.3 Nitrate and Nitrite Monitoring

Based on the water quality monitoring schedule, the SRA is required to collect an annual sample from the active well and analyze it for nitrates. The lab test must quantify the nitrate content as NO_3. The Hatfield State Park Well was last sampled for nitrate in May 2013 and the result was non-detect (ND). The next sample is due to be collected in 2014.

Nitrite (NO_2^-) sampling is required once every three years. The lab must quantify the result as nitrogen (N). The Hatfield State Park Well was last sampled for nitrite in May 2013 and the result was non-detect (ND). The next sample is due to be collected in 2015.

2.7.4 Source Bacteriological Monitoring

The SRA is not required to conduct monthly source monitoring.

California Ground Water Rule Triggered Source Monitoring

As per the requirements of the California Ground Water Rule (GWR), public water systems are required to conduct triggered source monitoring whenever a routine distribution system sample is positive for total coliform bacteria. The SRA has specified that the active well will be sampled for *E. coli* bacteria when a routine distribution system sample shows the presence of total coliform bacteria.

2.8 DISTRIBUTION SYSTEM MONITORING

2.8.1 Bacteriological Water Quality

The SRA is required to collect and analyze one bacteriological sample per month from within the distribution system. The SRA does not have an approved Bacteriological Sample Siting Plan on file with the Department. The SRA must submit a BSSP to the Department by November 30, 2013. A guidance document is provided in Appendix D. A review of the data since 2001 has revealed that the SRA is prone to sporadic total coliform contamination. The last total coliform positive sample was collected in November 2010. The sample was negative for E.coli bacteria and fecal coliform bacteria. The correct number of repeat samples were collected. All repeat samples were negative for coliform bacteria. A summary of the distribution bacteriological monitoring is provided in Appendix C.

III. APPRAISAL OF SANITARY HAZARDS & PUBLIC HEALTH SAFEGUARDS

Overall, the Hatfield State Recreation Area water supply facilities are in good sanitary condition and appear to be operating satisfactorily under competent supervision. Water produced by the system meets all drinking water standards. Source capacity information for the Hatfield State Park Well is unknown. No water outages have been reported to the Department. No storage is provided.

IV. CONCLUSIONS AND RECOMMENDATIONS

It is the Finding of the Drinking Water Field Operations Branch of the State Department of Public Health that the CDPR – Hatfield State Recreation Area

water system is capable of supplying water that complies with all primary drinking water standards with competent operation of the existing water system. It is, therefore, recommended that a revised domestic water supply permit be granted to the CDPR – Hatfield State Recreation Area water system to continue operation of the existing system subject to the following provisions:

1. The permitted active source for the SRA is the Hatfield State Park Well (PS Code 2410302-001). The Merced District Office of the Drinking Water Field Operations Branch (DWFOB) must permit all other sources before they can be used in the water system.

2. The SRA must comply with the attached water quality monitoring schedule for the Hatfield State Park Well. All water quality monitoring results obtained in a calendar month must be submitted to the Department via electronic data transfer (EDT) by the tenth day of the following month.

3. The SRA must install a flow meter on the Hatfield State Park Well before December 31, 2013. The SRA must also begin recording monthly production values from the Well and submit them to the Department annually on the Annual Report to the Drinking Water Program.

4. The SRA must submit a Bacteriological Sample Siting Plan (BSSP) to the Department for review and approval by November 30, 2013. A guidance document is provided in Appendix D.

5. The SRA must submit an Emergency Chlorination Plan to the Department for review and approval by December 31, 2013. A guidance document is provided in Appendix E.

Report Prepared By:

Maria Wieczorek
Environmental Scientist

Appendix A: Water Quality Monitoring Schedule
Appendix B: Last Sample / Next Due Water Quality Schedule
Appendix C: Distribution Bacteriological Monitoring Report
Appendix D: SWS BSSP instructions
Appendix E: Guideline for Preparation of Emergency Chlorination Plan

APPENDIX A

WATER QUALITY MONITORING SCHEDULE

(Transient Noncommunity Systems)

Updated October 2007

This schedule supercedes all previous monitoring schedules.

Chemical - Section/Table	MCL mg/l	Frequency
Primary Inorganics - 64432		
Aluminum	1	Not required
Antimony	0.006	Not required
Arsenic	0.010	Not required
Barium	1	Not required
Beryllium	0.004	Not required
Cadmium	0.005	Not required
Chromium	0.05	Not required
Cyanide	0.15	Not required
Fluoride	2	Once
Mercury	0.002	Not required
Nickel	0.1	Not required
Perchlorate	0.006	Not required
Selenium	0.05	Not required
Thallium	0.002	Not required
Lead	Lead Rule	Not required
Asbestos - 64432.2		
Asbestos	7 MFL	Not required
Nitrate/Nitrite - 64432.1		
Nitrate (as NO_3)	45	Annual if <1/2 MCL Quarterly for 1 yr if ≥1/2 MCL, then annual
Nitrate + Nitrite (sum as nitrogen)	10	N/A
Nitrite (as nitrogen)	1	Once/36 months if <1/2 MCL Quarterly for 1 yr if ≥1/2 MCL, then annual
Secondary Std - Table 64449-A		
Aluminum	0.2	Not required
Color	15	Not required
Copper	1	Not required
Foaming Agents	0.5	Not required
Iron	0.3	Once
Manganese	0.05	Once
Odor	3	Not required
Silver	0.1	Not required
Thiobencarb	0.001	Not required
Turbidity	5	Not required
Zinc	5	Not required
General Minerals - 64449		
Bicarbonate	N/A	Once
Carbonate	N/A	Once
Hydroxide Alkalinity	N/A	Once
Calcium	N/A	Once
Magnesium	N/A	Once
Sodium	N/A	Once
Total Hardness	N/A	Once
Secondary Std - Table 64449-B		
TDS	500-1000;1500	Not required
Specific Conductance	900-1600; 2200	Once
Chloride	250-500;600	Not required
Sulfate	250-500;600	Not required
pH	6.5-8.5	Once

DATE: 11/06/13 STATE OF CALIFORNIA PAGE: 1
REPORT: R0117/1 DRINKING WATER PROGRAM TIME: 13:32
LAST SAMPLE DATE AND MONITORING SCHEDULE

SYSTEM NO: 2410302 NAME: CDPR-HATFIELD COUNTY: MERCED
SOURCE NO: 001 NAME: HATFIELD STATE PARK WELL PSCODE: 2410302-001 CLASS: TNC1 STATUS: AU

GROUP IDENTIFICATION / CONSTITUENT IDENTIFICATION	LAST SAMPLE	COUNT	FREQ	MODIFIED SCHEDULE	NEXT SAMPLE DUE
NITRATE/NITRITE					
71850 NITRATE (AS NO3)	2013/05/14	16	12		2014/05
00620 NITRITE (AS N)	2013/05/14	6	36		2016/05

FREQ IS NUMBER OF MONTHS BETWEEN SAMPLES. WHEN FREQ IS 0, SAMPLE IS DUE NOW.
WHEN FREQ IS 999, NO SAMPLES ARE REQUIRED. COUNT IS NUMBER OF SAMPLES IN THE DATABASE.

Bacteriological Distribution Monitoring Report

2410302 CDPR - Hatfield

Distribution System Freq: 1/M

Sample Date	*Location*	*T Coli*	*E Coli*	*F Coli*	*HPC*	*Type*	*Cl2*	*Violation*	*Comment*
11/1/2001	5 Samples	A	A			Routine	0.1-0.2		
12/1/2001	1 Sample	A	A			Routine			
1/15/2002	Hatfield #7	A	A			Routine	3.0		
2/26/2002	Hatfield Group Camp	A	A			Routine	0		
3/18/2002	Hatfield #7	A	A			Routine	0.20		
4/19/2002	Hatfield G&P Camp	A	A			Routine			
5/6/2002	Hatfield SRA Day Use Restroom	A	A			Routine			
6/17/2002	Hatfield SRA Day Use Restroom	A	A			Routine			
7/22/2002	Hatfield SRA Faucet Day Use RR	A	A			Routine			
8/20/2002	Hatfield SRA Day Use Restroom	A	A			Routine			
8/28/2002	Hatfield	P	A			Routine			
9/19/2002	Hatfield SRA Day Use Restroom	P	A			Routine		MCL	
9/23/2002	Hatfield SRA Day Use Restroom	P	A			Repeat			
9/26/2002	Hatfield Day Use	A	A			Repeat			
9/26/2002	Hatfield Grp Camp	A	A			Repeat			
10/16/2002	Hatfield SRA Day Use Restroom	A	A			Routine			
11/18/2002	Hatfield Group Area	A	A			Routine			
12/2/2002	Site #7 Faucet	A	A			Routine			
1/6/2003	Group Camp Faucet	A	A			Routine			
2/24/2003	Hatfield Group Area	P	A			Routine			
2/26/2003	Downstream	A	A			Repeat	0.10		
2/26/2003	Resample	A	A			Repeat	0.15		
2/26/2003	Upstream I	A	A			Repeat	0.20		
2/26/2003	Upstream II	A	A			Repeat	0.20		
3/18/2003	Hatfield Group Area	A	A			Routine	0.20		
4/15/2003	Site #7	A	A			Routine	0.20		
5/19/2003	Hatfield Group Area	A	A			Routine			
6/17/2003	Hatfield Group Area	A	A			Routine	0.00		
7/22/2003	Site #7	A	A			Routine			
8/1/2003	1Sample	A	A			Routine			*Individual analysis not provided*
9/1/2003	1 Sample	A	A			Routine			*Individual analysis not provided*
10/1/2003	1 Sample	A	A			Routine			*Individual analysis not provided*

Sample Date	Location	T Coli	E Coli	F Coli	HPC	Type	Cl2	Violation	Comment
11/1/2003	1 Sample	A	A			Routine			*Individual analysis not provided*
12/1/2003	1 Sample	A	A			Routine			*Individual analysis not provided*
1/1/2004	1 Sample	A	A			Routine			*Individual analysis not provided*
2/23/2004	Hatfield Site Number 7	A	A			Routine	0.10		*Individual analysis not provided*
3/23/2004	Hatfield Group Area	A	A			Routine	0.50		
4/27/2004	Hatfield # 7	A	A			Routine	0.10		
5/17/2004	Hatfield Group Area	A	A			Routine			
6/15/2004	Hatfield Group Area	P	A			Routine	0.00		
6/17/2004	Hatfield Downstream	<1.1	<1.1			Special	0.00		*Sanitized and posted system . No TCR failure*
6/17/2004	Hatfield Upstream	16	<1.1			Special	0.00		*Not on potable line,checking backflow system*
6/22/2004	Hatfield Group Area	A	A			Special	0.20		
7/12/2004	Hatfield Group Area	A	A			Routine	0.20		
8/24/2004	Hatfield Group Area	A	A			Routine	0.00		
9/14/2004	Hatfield # 7	A	A			Routine			
10/12/2004	Hatfield Group Area	A	A			Routine	0.20		
11/9/2004	Hatfield Site No 7	A	A			Routine	0.10		
12/13/2004	Hatfield Group Are	A	A			Routine	0.20		
1/10/2005	Group Area	P	A			Routine	0.2		
1/14/2005	Group Area	A	A			Repeat	0.2		
1/14/2005	Hatfield Uptrm I	A	A			Repeat	0.2		
1/14/2005	Hatfield Upstrm II	A	A			Repeat	0.2		
1/14/2005	Hatfield Dwnstrm	A	A			Repeat	0.2		
2/8/2005	Site 7	A	A			Routine	0.2		
2/8/2005	Upstream	A	A			Routine	0.2	MR4	*5/9/05 Issued EL 03-11-05E-004 for MR4.*
2/8/2005	Downstream	A	A			Routine	0.1		
3/14/2005	Hatfield Group Area	A	A			Routine	0.1		
4/1/2005	1 sample	A	A			Routine		MR8	*Need cc of analysis.*
4/18/2005	Site 7	A	A			Routine	0.0		*Rec'd analysis 6/10/05.*
5/23/2005	Hatfiled Group Area	A	A			Routine			
6/30/2005	Group Area	P	A			Routine	0.00	MR8	*Syst. Reported repeats taken 07/05, need cc of repeat analyses. Rec'd 7/12/05.*
7/3/2005	Upstream I	A	A			Repeat	0.0		
7/3/2005	Downstream I	A	A			Repeat	0.0		
7/3/2005	Repeat I	A	A			Repeat	0.0		
7/3/2005	Repeat II	A	A			Repeat	0.0		
7/3/2005	Upstream II	A	A			Repeat	0.0		

Sample Date	Location	T Coli	E Coli	F Coli	HPC	Type	Cl2	Violation	Comment
7/19/2005	Group	A	A			Routine	0.0		
7/19/2005	Resample	A	A			Routine	0.0		
7/19/2005	Upstream I	A	A			Routine	0.0		
7/19/2005	Upstream II	A	A			Routine	0.0		
7/19/2005	Downstream	A	A			Routine	0.0		
8/9/2005	Site #7	A	A			Routine			
9/6/2005	Group Area	A	A			Routine			
10/12/2005	Site #7	A	A			Routine			
11/22/2005	Site Number 7	P	A			Routine			
11/24/2005	Upstream Number 2	A	A			Repeat	0.2		
11/24/2005	Upstream Number 1	A	A			Repeat	0.2		
11/24/2005	Downstream Number 1	A	A			Repeat	0.2		
11/24/2005	Number 7	A	A			Repeat	0.2		
11/24/2005	Downstream Number 2	A	A			Repeat	0.2	MR8	*01/03/06: Told AH about syst. taking 5 repeat samples, count them towards the 5 req. the following month and AH will contact system and tell them that they need to collect the 5 rou's the following month.*
12/12/2005	Group	A	A			Routine	0.2	MR8	*Why is there Cl2 residual in system, are they still chlorinating? 2/21/06: Talked to Steve S. a/ not to Cl2 for precautionary purposes.*
1/17/2006	Day Use	A	A			Routine	0.1		
2/14/2006	Hatfield Group Area	A	A			Routine			
3/22/2006	Campground	A	A			Routine			
4/19/2006	Group Camp	A	A			Routine			
5/16/2006	Group Camp	A	A			Routine			
6/28/2006	G. Camp	A	A			Routine			
7/26/2006	Day Use Restroom	A	A			Routine			
8/29/2006	Group Camp	A	A			Routine			
9/19/2006	Geo Hatfield Day Use RR	A	A			Routine			
10/16/2006	Restroom	A	A			Routine			
11/6/2006	Day Use Restroom	A	A			Routine			
12/20/2006	Group Camp Restroom	A	A			Routine			
1/23/2007	Day Use Restroom	A	A			Routine			
2/21/2007	Campground Restroom	A	A			Routine			
3/26/2007	Day Use Restroom	A	A			Routine			
4/25/2007	Campground Restroom	A	A			Routine			
5/9/2007	Day Use Restroom	A	A			Routine			
6/7/2007	Campground Restroom	A	A			Routine		MR7	*Rec'd 7/28/07.*

Sample Date	Location	T Coli	E Coli	F Coli	HPC	Type	Cl2	Violation	Comment
7/6/2007	Restroom	A	A			Routine			
8/2/2007	Day Use	A	A			Routine			
9/6/2007	Day Use Restroom	A	A			Routine			
10/9/2007	Group Camp Restroom	P	A			Routine			
10/11/2007	Day Use Restroom	A	A			Repeat			
10/11/2007	Group Camp Restroom	A	A			Repeat			
10/11/2007	Well	<1.1	<1.1			Source R			
10/11/2007	Residence	A	A			Repeat			
11/5/2007	Day Use Restroom	A	A			Routine		MR4	*1-11-08: EL#033-11-08E-002.*
12/1/2007	no samples							MR8	*Need bacti analysis. Rec'd 02/11/08.*
12/3/2007	Group Camp Restroom	A	A			Routine			
1/7/2008	SP Day Use	A	A			Routine			
2/6/2008	Campground Restroom	A	A			Routine			
3/3/2008	S.P. Day Use Restroom	A	A			Routine			
4/7/2008	Group Camp Restroom	A	A			Routine			
5/5/2008	Day Use Restroom	A	A			Routine			
6/2/2008	SP Campground Restroom	A	A			Routine			
7/2/2008	Day Use Restroom	A	A			Routine			
8/4/2008	Campground Restroom	A	A			Routine			
9/8/2008	SP Campground Restroom	A	A			Routine			
10/1/2008	Day Use Restroom	A	A			Routine			
11/3/2008	Day Use Restroom	A	A			Routine			
12/3/2008	Group Camp Restroom	A	A			Routine			
1/6/2009	Day Use Restroom	A	A			Routine			
2/2/2009	Group Camp Restrrom	A	A			Routine			
3/5/2009	Day Use Restroom	A	A			Routine			
4/7/2009	Group Camp Restroom	A	A			Routine			
5/7/2009	Day Use Restroom	A	A			Routine			
6/1/2009	Group Camp Restroom	A	A			Routine			
7/1/2009	Day Use Restroom	A	A			Routine			
8/6/2009	Camp Group Restroom	A	A			Routine			
9/10/2009	Day Use Restroom	A	A			Routine			
10/8/2009	Group Camp Restroom	A	A			Routine			
11/17/2009	Day Use RR	A	A			Routine			
12/15/2009	Group Camp Restroom	A	A			Routine			
1/6/2010	Day Use Restroom	A	A			Routine			
2/8/2010	Group Camp Restrrom	A	A			Routine			
3/23/2010	Day Use Restroom	A	A			Routine			
4/12/2010	Campground Restroom	A	A			Routine			

Sample Date	Location	T Coli	E Coli	F Coli	HPC	Type	Cl2	Violation	Comment
5/4/2010	Day Use Restroom	A	A			Routine			
6/8/2010	Group Camp Restroom	A	A			Routine			
7/19/2010	Day Use Restroom	A	A			Routine			
8/2/2010	Group Camp Restroom	A	A			Routine			
9/14/2010	Day Use Restroom	P	A			Routine			
9/16/2010	Well	<1.1	<1.1			Source R			*GWR satisfied*
9/16/2010	Group Camp	<1.1	<1.1			Repeat			
9/16/2010	DayUse Restroom	<1.1	<1.1			Repeat			
9/16/2010	Residence	<1.1	<1.1			Repeat			
10/1/2010	5 samples	<1.1				Routine			
11/8/2010	Group Camp Restroom	P	A			Routine			
11/15/2010	Well	<1.1	<1.1			Source R			*GWR satisfied*
11/15/2010	Residence	<1.1	<1.1			Repeat			
11/15/2010	Day Use Restroom	<1.1	<1.1			Repeat			
11/15/2010	Group Camp Restroom	<1.1	<1.1			Repeat			
12/13/2010	5 samples	A	A			Routine			
1/10/2011	Residence	A	A			Routine			
2/22/2011	Day Use Restroom	A	A			Routine			
3/15/2011	Group Camp Restroom	A	A			Routine			
4/1/2011	closed until further notice								
7/19/2011	Day Use restroom	P	A			Other			*system closed, well submerged, investigative sample*
1/9/2012	Potable Water Truck	A	A			Other	0.59		
1/9/2012	Day Use Restroom	A	A			Routine			
2/27/2012	Group Camp Restroom	A	A			Routine			
3/13/2012	Day Use Restroom	A	A			Routine			
4/1/2012	Sytem offline								
5/11/2012	Special	A	A			Other			
7/24/2012	Day Use Restroom	A	A			Routine			
8/8/2012	Group Camp Restroom	A	A			Routine			
9/4/2012	Day Use Restroom	A	A			Routine			
10/9/2012	Group Camp Restroom	A	A			Routine			
10/10/2012	Potable water truck	A	A			Other			
11/27/2012	potable water truck	A	A			Other			
11/27/2012	Day use Restroom	A	A			Routine			
12/4/2012	Potable water truck	A	A			Other	0.75		
12/4/2012	Day Use Restroom	A	A			Routine			
1/22/2013	Group Camp Restroom	A	A			Routine			
1/23/2013	Potable Water Truck	A	A			Other			
2/6/2013	Potable Truck	A	A			Other	0.8		

Sample Date	Location	T Coli	E Coli	F Coli	HPC	Type	Cl2	Violation	Comment
2/12/2013	Day Use Restroom	A	A			Routine			
3/5/2013	Day Use Restroom	A	A			Routine			
4/9/2013	Group Camp Restroom	A	A			Routine			
5/14/2013	Residence	A	A			Routine			
6/4/2013	6 samples: Day use, Residence, Group Camp, Site 11, Pump house, Lamp sink	A	A			Routine			
6/4/2013	Potable truck	A	A			Routine			
7/10/2013	Potable truck	A	A			Other			
7/10/2013	Group Camp RR	A	A			Routine			
8/21/2013	Potable Truck	A	A			Other			
8/21/2013	Day Use Restroom	A	A			Routine			
9/10/2013	Cgroup Camp Restroom	A	A			Routine			
9/11/2013	Potable watertruck	A	A			Other			

Violation Key

MCL	Exceeds the maximum contaminant level
MR1	No monthly sample for the report month
MR2	No quarterly sample for the report month
MR3	Incorrect number of routine samples for the report month
MR4	Did not collect 5 routine samples for previous month's positive sample
MR5	Incorrect number of repeat samples as follow-up to a positive sample
MR6	No source sample
MR7	No summary report submitted
MR8	Other comments and/or info.

State of California—Health and Human Services Agency
California Department of Public Health

RON CHAPMAN MD, MPH
Director & State Health Officer

EDMUND G. BROWN JR
Governor

DRINKING WATER FIELD OPERATIONS BRANCH – MERCED DISTRICT

GUIDELINES FOR COMPLETION OF THE BACTERIOLOGICAL SAMPLE SITING PLAN

(For systems collecting four or fewer routine samples per month)

The total coliform regulation requires the water supplier to submit a bacteriological sample siting plan to the Department for review and approval. The locations where samples are to be collected must be written down and formally approved by the Department. These guidelines and Attachments B and C, "Bacteriological Sample Siting Plan" forms, are to assist you in complying with these requirements.

To comply with the requirements for submitting a Bacteriological Sample Siting Plan, two (2) items must be submitted to the Department at this time.

1. A system map, street map, or system schematic showing all sampling locations must be submitted. The map can be prepared by any system representative. It does not have to be prepared by an engineer. The following are to be shown on the map:

   - Water Sources (i.e., well or spring)
   - Treatment Facilities (i.e., chlorination)
   - Storage Tanks
   - Pressure Reducing Stations
   - Booster Stations
   - Pressure Zones
   - Dead Ends
   - Service Area Boundaries
   - Routine Sample Sites
   - Repeat Sample Sites
   - Special Sample Sites

2. Complete either Attachment B or C, the "Bacteriological Sample Siting Plan" form, and return the system map and form to the Department for review and approval. The use of

either Attachment B or C depends on the number of repeat samples required. Refer to pages 2 and 3 below in "*How many repeat sampling sites are required?*"

3. Once the Bacteriological Sample Siting Plan has been approved by the Department, copies should be provided to the person responsible for sample collection, the laboratory and the person responsible for reporting coliform-positive samples to the Department.

Selection of Sampling Sites

The routine sampling sites chosen must be representative of the water distribution system including all pressure zones, areas supplied by each water source and distribution reservoir.

Looped Systems: If your entire water distribution system is looped, then one routine sample point may be representative of your system, assuming valves are open.

Pressure Zones: You should only be concerned about sampling in different pressure zones if your water system serves different areas of varying elevations, for example in mountainous areas.

How many routine sampling sites are required?

A minimum of five (5) routine sampling sites must be selected and indicated on your map and sampling plan form. If your water system is required to collect less than 5 routine samples a month, then 5 routine samples must be collected the month following any coliform positive sample. This is the reason for identifying 5 routine sites in your plan.

If the water system is not adequately represented by 5 routine sample locations, you may identify additional locations and collect more than one sample per month. Each site identified should be rotated for sampling at least every three months.

How many repeat sampling sites are required?

Either complete **Attachment B** if your system collects **one or fewer** samples per month, a repeat sample set is consists of four samples to be collected from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an *upstream location.*
  (within 5 connections of the routine site)
- One repeat sample from a *downstream location.*
  (within 5 connections of the routine site)
- One sample from *some other location.*
  (within 5 connections upstream or downstream of the routine site or a well site[see Attachment A])

or complete **Attachment C** if your system collects **more than one** routine sample per month, a repeat sample set consists of three samples from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an upstream location.
  (within 5 connections of the routine site)
- One repeat sample from a downstream location.
  (within 5 connections of the routine site)

What if the water system does not have enough locations to select the required number of routine and repeat sample sites?

If the water system does not have enough sample locations to identify 5 routine sites and 3 to 4 repeat sites per routine, you may either (1) identify fewer than 5 routine sites as long as the sampling adequately reflects water quality in the distribution system, or (2) use some of the routine sites as repeat sites for other routines (i.e., double up on use of available sites).

Pointers for Sample Site Selection

- When selecting a routine sample site you should be able to select a site upstream and a site downstream for repeat sampling.
- Select a site where the water is used continuously all year round.
- Pick a site that is easily accessible, i.e., a fenced yard with a locked gate and vicious dog is not a good selection.
- When choosing a sampling tap you should consider these factors:

The sampling tap should be located in as clean an environment as possible. It should be protected from contamination by humans, animals, airborne materials or other sources of contamination.

If you choose an outside private tap, it should be one that is in frequent use, clean, and at least 1½ feet (18 inches) above the ground. The sample tap should discharge downward.

If you choose an inside tap, be sure that you are not sampling from drinking fountains, taps which have aerators or strainers, or swivel faucets, or taps off of individual homeowner treatment units.

Do not choose a fire hydrant as sampling tap.

Avoid taps that are surrounded by excessive foliage or taps that are dirty or corroded.

Avoid taps that leak, have fittings with packing, or have permanent hoses or attachments fastened to the tap (Never collect a sample from a hose).

Avoid the use of dead ends for routine sample collection, and use for repeat samples only of no other sample sites are available and if there is continuous water use from a service off the dead-end.

Instructions for Completing the Bacteriological Sample Siting Plan Form

This form has been designed to include all the requirements for the Bacteriological Sample Siting Plan.

- **PWS Classification**

  The public water system (PWS) classification for your water system is either community, nontransient noncommunity or transient noncommunity. This classification determines the type and frequency of all water quality testing. If you are uncertain of your classification, contact the Department.

- **Month/Daily Users**

  The monthly population determines the frequency of bacteriological sample collection for community water systems. The daily population determines the frequency of sample collection for transient and nontransient noncommunity systems.

- **Active Service Connections (Community water systems only)**

  This is the number of active hook-ups served by the system. If your system has a hook-up to a vacant lot, do not count this as an active connection. If a vacant lot has a right to a future connection, do not count this an active connection. If a residence is connected to the system, but the residence is vacant, count this as an active hook-up.

- **Distribution Sampling Frequency**

  This is the minimum number of routine bacteriological samples required at the frequency specified. If any routine sample is positive for coliform bacteria, additional repeat samples will be required. Repeat samples are in addition to the required routine samples. If you are uncertain of the routine sampling frequency for your water system, contact the Department. Attachment A provides the minimum frequency based on type of water system. This will be increased if more than 1,000 people have been served on a daily basis.

  A coliform-positive sample will increase the routine monitoring for a small system the following month. A system normally collecting less than 5 routine samples per month which has a coliform positive sample must collect a minimum of five (5) routine samples the following month.

- **Source Sampling Frequency**

  This is the amount of bacteriological sampling that the water system is going to collect from each source (well, surface water-raw, spring, etc.) per month or quarter. Source sampling is required at a specified frequency when the water system continuously treats (i.e. chlorination) the water or has a surface water treatment plant.

- **Water Treatment**

  This is the type of water treatment that the water system applies to the water that is entering the distribution system. If your water system does not provide water treatment, then write N/A.

- **Trained Sampler**

  The person collecting samples must be trained.

  Sampling Service: Water systems utilizing a certified laboratory or other sampling service for water sample collection will be considered to have trained samplers. Enter the name of the laboratory or sampling service collecting your samples. A copy of the approved Bacteriological Sample Siting Plan should be provided to the laboratory or sampling service, if one is used.

  Other Trained Samplers: Any person receiving a certificate from AWWA for attendance of the Water Sampling Training should submit a copy of their certificate along with the completed form. Any other samplers should submit a statement of their experience and training to this Department for approval.

- **Analyzing Lab**

  Enter the state certified laboratory which will be analyzing your water samples.

- **Person Responsible to Report Coliform-Positive Samples to DHS**

  This should be the person that the laboratory is required to contact when a sample is total or fecal coliform positive. This person must notify the Department within 24 hours of a violation of the total coliform standard (more than one positive sample in a month) or when any sample is fecal or *E. coli* positive. This person should have the authority to take corrective action as required by regulation and the Department. This should be the same person listed on your Emergency Notification Plan. Refer to Attachment A for additional instructions related to follow-up to positive samples. Please note: Regulation now requires the water supplier to require the laboratory immediately notify the Department of any positive bacteriological result if the laboratory cannot make direct contact with

water system's designated contact person within 24 hours. We recommend you provide a copy of your emergency notification plan to your laboratory.

- **Day/Evening Phone Number**

The Department requires that the water system provide the phone numbers of the person listed above so that they can be contacted by the laboratory or the Department at any time during the day or evening in the event of a bacteriological emergency.

- **Signature and Date**

The person preparing the Sample Siting Plan should sign and date the plan. If the Department has questions regarding the sampling plan, this is the person to be contacted.

- **Sample ID**

This should be entered on the laboratory slip when the sample is turned into the laboratory. This is the unique identifier for the water sample location or the location address may also be used.

For systems collecting one or fewer routine samples per month, a minimum of five (5) routine sampling sites with three (3) repeat sampling sites for each routine sample locations must be listed. Use the **Attachment B** plan form.

For systems collecting more than one routine sample per month, a minimum of five (5) routine sampling sites with two (2) repeat sampling sites for each routine sample location must be listed. Repeat sample sites are to be located within five (5) service connections upstream and downstream of the routine sample site. Use the **Attachment C** plan form.

All sample locations should be marked in some way with the Sample ID or location address, i.e., the code painted on the sampling location or tagged with a water proof tag so the person collecting the water sample is sure to collect the water from the correct sample locations.

- **Sample Type**

This describes what type of sample (routine or repeat) is to be collected at this location.

- **Sample Point**

This is the type of the sample location. Use the following abbreviations, when appropriate.

HB	Hose Bib (exterior)
SF	Sink Faucet
PC	Goose Neck Type Copper Tube with Pet Cock

- **Location of Sample Point**

  This is the description of the area in the distribution that the sample site is located. Routine sample sites shall not be located at dead ends.

DE	Dead End (Not Recommended)
PZ	Pressure Zone
RD	Representative Distribution

- **Location Address**

  This is the actual physical location where the water sample is to be collected. If possible use a street address, i.e., 103 Good Street. If the location does not have a street address use the nearest crossroads or use the last name of the resident, i.e., "Brown Residence." If the location is a business, please list the business name and address.

  When describing the location, keep in mind that the person collecting water samples must be able to locate the sample site from your description.

- **Months Sample Collected at This Location**

  This is the schedule for routine samples to be collected. For example, suppose two (2) sites are representative of your systems. Site No. 1 will be sampled in January, March, May, July, September, and November. Site No. 2 will be sampled in February, April, June, August, October, and December. All routine sites identified should be rotated to allow sampling at least every 3 months.

ATTACHMENT A

BACTERIOLOGICAL MONITORING REQUIREMENTS
For Water Systems collecting 4 or fewer routine samples

1. Minimum Monitoring Frequency

Monthly Population Served			Service Connections			Minimum Frequency
25	to	1,000	15	to	400	1 per month
1,001	to	2,500	401	to	890	2 per month
2,501	to	3,300	891	to	1,180	3 per month
3,301	to	4,100	1,181	to	1,460	4 per month

Increased monitoring frequency may be required if there is more than one pressure zone in the distribution system or multiple sources or storage reservoirs. If your system is providing continuous chlorination treatment, closely review Item 6 below.

2. Routine and Repeat Sampling

All **routine samples** should be collected from the distribution system (not from the well) at locations specified in an approved Bacteriological Sample Siting Plan. If such a plan has not been prepared for your water system, contact the Department for assistance.

3. Repeat Monitoring After a Coliform-Positive Sample

Notification of a Coliform-Positive Sample - The water system shall require the laboratory to notify the system within 24 hours if any sample is coliform-positive. The water system must collect a repeat sample set within 24 hours of notification of the coliform-positive sample. **If the sample is fecal coliform or *E. Coli* positive, the water system should contact the Department immediately.**

Please note: Regulation now requires the water supplier to require the laboratory immediately notify the Department of any positive bacteriological result if the laboratory cannot make direct contact with the water system's designated contact person within 24 hours. We recommend you provide a copy of your emergency notification plan to your laboratory.

Repeat Sampling - *For systems collecting **only one (1)** sample per month or quarter*, a repeat sample set shall consist of four (4) samples as follows: one (1) from the routine sample site at which the positive occurred, one (1) from the upstream repeat sample site, one (1) from the downstream repeat sample site and one (1) from the operating well or another location within the system that would best help to identify the source or area of contamination.

*For systems collecting **more than one (1)** sample per month*, a repeat sample set shall consist of three (3) samples as follows: one from the routine sample site at which the positive occurred and two from the upstream and downstream repeat sample sites.

The repeat sample sites shall be located within five service connections upstream and downstream of the routine site as identified in the Bacteriological Sample Siting Plan. At least one repeat sample shall be collected from upstream and one from downstream unless there is no upstream or downstream service connection. Contact the Department as soon as the results of the repeat samples are obtained.

The following criteria should be considered when determining where to collect the fourth repeat sample:

- For systems with only one active well and do not provide continuous chlorination, the sample may be collected at the wellhead.
- For systems with more than one active well, it may not be possible to determine which well was serving the area where the positive routine sample was collected. For these systems, the fourth repeat sample should be collected at a storage tank or another point in the distribution system.
- For systems providing continuous chlorination, the system should already be conducting raw-water bacteriological monitoring at a point ahead of chlorination on at least a quarterly basis. These samples should be used to determine if the source of bacteriological contamination is from the well itself. For these systems, the fourth repeat sample should be collected at a storage tank or another point in the distribution system.
- Contact the Department for assistance.

If any of the above criteria would result in a change or revision to your existing bacteriological sample-siting plan, you must first submit a revised plan to our office for review and approval before implementing any such change or revision.

Any additional samples collected from the well(s) for investigative purposes (*not part of the repeat sample set*) should be labeled as "special" samples (or "other" samples), and will not be counted towards compliance with the monthly total coliform water quality standards.

Sampling the Month Following a Coliform-Positive Sample - If a public water system for which fewer than five routine samples/month are collected has one or more total coliform-positive samples, the water supplier shall collect at least five routine samples the following month. These samples can be collected on the same day from five different routine sites or from the same routine sites at 15 minute intervals (if fewer than five sites are available). If all five samples are negative for total coliform, the water system may return to the normal sampling frequency during the next sampling period.

4. Determining Compliance with the Coliform Standard

A public water system will fail the coliform maximum contaminant level (MCL) if: For a public water which collects fewer than 40 samples per month, at least two samples collected in the same month are coliform-positive. When this occurs, the water system representative shall contact the Department immediately (within 24-hours or the next business day if the office is closed). The water system will be required to conduct public notification and will be provided with an approved notification to be used. Public notification shall be conducted by direct mail, hand delivery or posting (where approved).

5. Monthly Reporting of Coliform Monitoring Results

The analytical results of all coliform monitoring shall be reported to the Department by the 10th day of the month following sample collection. The water system can request the laboratory to provide the results to the Department; however, the water system is ultimately responsible to ensure that the sample results were received. If the water delivered to your water system is provided with a disinfection treatment, the chlorine residual should be measured and reported at the same time and location(s) that the bacteriological sample(s) are collected. This residual must be provided to the Department on the laboratory analysis report at this time. Beginning January 1, 2004, EPA's Disinfectant/Disinfection By-Product (D/DBP) Rule will require this reporting to our Department.

6. Bacteriological Monitoring of Wells (for systems chlorinating)

Water systems that are routinely chlorinating the water supply are required to sample the raw well water for coliform bacteria. Initially, a minimum of six consecutive monthly samples must be collected from the well discharge. The samples must be collected at a location ahead of chlorination. After six consecutive monthly samples do not show the presence of coliform bacteria, the water system may request a reduction in sampling to one sample per quarter. The laboratory should be instructed to determine the most probable number of coliform (MPN) for well samples. The results of all samples shall be submitted to the Department.

ATTACHMENT B (see p. 6 of instructions)

BACTERIOLOGICAL SAMPLE SITING PLAN

System No.:	**System Name:**		
PWS Classification:	**No. Monthly Users:**	**Daily Users:**	
No. Active Service Connections:	**Distribution Sampling Frequency:**		
Source Sampling Frequency:	**Continuous Water Treatment:**		
Name of Trained Sampler:	**Analyzing Lab:**		
Person responsible to report coliform-positive samples to DHS:	**Day/Evening Phone No.:**		
Signature of Water System Representative:	**Date:**		

Sample ID	Sample Type	Sample Point	Location of Sample Point	Address of Sample Point	Months Sample Collection at this Location
1-ROU	Routine				
1-REP1	Repeat				Repeat Sample Only
1-REP2	Repeat				Repeat Sample Only
1-REP3	Repeat				Repeat Sample Only
2-ROU	Routine				
2-REP1	Repeat				Repeat Sample Only
2-REP2	Repeat				Repeat Sample Only
2-REP3	Repeat				Repeat Sample Only
3-ROU	Routine				
3-REP1	Repeat				Repeat Sample Only
3-REP2	Repeat				Repeat Sample Only
3-REP3	Repeat				Repeat Sample Only
4-ROU	Routine				
4-REP1	Repeat				Repeat Sample Only
4-REP2	Repeat				Repeat Sample Only
4-REP3	Repeat				Repeat Sample Only
5-ROU	Routine				
5-REP1	Repeat				Repeat Sample Only
5-REP2	Repeat				Repeat Sample Only
5-REP3	Repeat				Repeat Sample Only

If the water system has one or more total coliform-positive samples, at least five routine samples will be collected the following month.

ATTACHMENT C (see p. 6 of instructions)

BACTERIOLOGICAL SAMPLE SITING PLAN

System No.:	**System Name:**		
PWS Classification:	**No. Monthly Users:**	**Daily Users:**	
No. Active Service Connections:	**Distribution Sampling Frequency:**		
Source Sampling Frequency:	**Continuous Water Treatment:**		
Name of Trained Sampler:	**Analyzing Lab:**		
Person responsible to report coliform-positive samples to DHS:	**Day/Evening Phone No.:**		
Signature of Water System Representative:	**Date:**		

Sample ID	Sample Type	Sample Point	Location of Sample Point	Address of Sample Point	Months Sample Collection at this Location
1-ROU	Routine				
1-REP1	Repeat				Repeat Sample Only
1-REP2	Repeat				Repeat Sample Only
2-ROU	Routine				
2-REP1	Repeat				Repeat Sample Only
2-REP2	Repeat				Repeat Sample Only
3-ROU	Routine				
3-REP1	Repeat				Repeat Sample Only
3-REP2	Repeat				Repeat Sample Only
4-ROU	Routine				
4-REP1	Repeat				Repeat Sample Only
4-REP2	Repeat				Repeat Sample Only
5-ROU	Routine				
5-REP1	Repeat				Repeat Sample Only
5-REP2	Repeat				Repeat Sample Only

If the water system has one or more total coliform-positive samples, at least five routine samples will be collected the following month.

State of California—Health and Human Services Agency
California Department of Public Health

RON CHAPMAN, MD, MPH
Director

EDMUND G. BROWN JR.
Governor

California Department of Public Health
November 2010

EMERGENCY DISINFECTION PLAN REQUIREMENTS

An emergency disinfection plan, designed to outline procedures in the event of bacteriological contamination, shall be developed and a copy submitted to our office. The plan shall outline specific response procedures for disinfection of wells, pressure tanks, storage tanks and installation of emergency chlorination equipment. Guidance on the operation of the emergency disinfection equipment, to be included in the Emergency Disinfection Plan, is included in the attached document (Emergency Disinfection Plan Guidance).

The plan shall state that the necessary equipment is on-site or readily available and the means by which to connect and activate it have been provided. Those items needed to accommodate emergency chlorination equipment include:

- An all weather, 110 volt electrical receptacle, energized by the well pump operation.
- A three-quarter (3/4) inch threaded tap on the piping downstream of the well check valves for use as a chlorine injection point.
- A sample tap (non-threaded) at least three to six feet downstream of the chlorine injection point.

The plan should further state that qualified personnel (specify who) are under contract to carry out the plan and install, adjust and operate the equipment as necessary. The plan should also include the treatment or distribution operator certification grade and emergency telephone numbers of water system staff and certified operator(s).

Attachment: Emergency Disinfection Plan Guidance

Southern California Drinking Water Field Operations Branch
265 W. Bullard Avenue, Suite 101, Fresno, CA 93704
(559) 447-3300; Fax (559) 447-3304
Internet Address: http://www.cdph.ca.gov/programs/Pages/DDWEM.aspx

Emergency Disinfection Plan Guidance
for
Public Water Systems

The purpose of this Emergency Disinfection Plan (EDP) is to assist utilities implement emergency chlorination. The guidance provided below is designed to facilitate the installation of emergency chlorination equipment and to assist in the setting of chemical dosage in order to maintain acceptable free chlorine residual needed to insure public health protection immediately after a disaster. Items which should be obtained prior to the onset of a disaster include the following equipment:

1. Emergency chlorination units.
2. Chlorine residual test kits (preferably DPD)
3. Granular Calcium Hypochlorite, 65% available chlorine, (liquid sodium hypochlorite has a relatively short shelf life so it is advisable that it not be purchased in advance). Chemicals used for emergency chlorination must be approved under ANSI/NSF[1] Standard 60 (direct additives).

Installation Procedures

A utility should not wait until an emergency has occurred before it attempts to install its emergency chlorination equipment. It is advisable that all field maintenance staff be familiar with the installation procedures in order to quickly install the emergency chlorination equipment. The remainder of this plan addresses the use of hypochlorinators in the event of an emergency. For those utilities which use gas chlorination units, they should already be familiar with their operation if they are using this type of equipment.

The chlorination equipment purchased by the utility must be adequately sized for the proposed installation. The feed capacity of the hypochlorinator should allow the utility to does at a minimum of 5 parts per million free chlorine residual. After the emergency chlorination units have been physically connected to the wells and/or other sources in question, refer to the attached table or use the following procedures to calculate the appropriate settings. If you are unable to perform these calculations, contact a staff of the Drinking Water Program immediately.

The attached tables may be used to mix a solution of a known strength. Decide on a solution strength that you wish to use and find the amount of chlorine needed for a 100 gallon barrel from Table 1.

Table 2 can be used to determine the volume of solution to be added for different flow rates for each mg/L of chlorine dosage. It should be recognized that large capacity wells will need stronger solution strengths or the feed barrel will need to be filled too frequently. The volumes in table 2 are in gallons per day (gpd). If the feed pump capacity is given in gallons per hour, then the volume from Table 2 must be divided by 24 to give a gph value.

To determine the appropriate pump setting, the value from Table 2 must be divided by the feed pump capacity.

Example:

Feed Pump Capacity = 10 gph; Q = 1500 gpm; 7% solution; 5 mg/L dosage

From table 2 → Chlorine Volume = 30.9 gpd for each mg/L.

For 5 mg/L → 5 x (30.9) = 154.5 gpd

Since feed pump has a maximum capacity of 10 gph, the appropriate length of stroke setting is:

$$\frac{154.5 \times 24}{10 \text{ gph}} = 0.64$$

Outlined below are the equations to use if the Tables are not used:

1. A solution barrel of a known volume must be obtained. The barrel should be filled with a known volume of water. To this volume, a known weight of chemical should be added. The solution strength must be determined using the equation given below:

$$\% \text{ solution} = \frac{\text{Weight of chemical added to solution barrel (lbs)}}{\text{Weight of water in solution barrel (lbs)}} \times 100$$

(1 gallon of water weighs 8.34 lbs)

A 6% solution can be obtained by adding one half pound of chemical per gallon of water using a 100 gallon barrel. (see below):

50 / (100 x 8.34 lb/gal of water) x 100 = 5.99 or 6%

↓

used to get percentage

To calculate the pounds per hour of chemical that must be added to obtain a know chlorine concentration, the following equation must be used:

Equation #1:

lbs per hour of chemical = 8.34 x desired dosage in ppm x flow rate in gpm x 60 min/1,000,000

Assuming the desired dosage is 5 ppm that gives the following equation:

Equation #2: lbs per hour of chemical = 2.5×10^{-3} x flow rate in gpm

Next you must determine the required gallons per hour of chemical to be added. This must be obtained using the following equation:

Equation #3:

gallons per hour of chemical = lbs per hour / 8.34 / solution strength / 100 (from above)

Once this value has been obtained, then the next step is to review the maximum feed rate in gallons per day of the chemical feed pump. This is generally printed in a label attached to the pump and it may specify the discharge pressure this maximum rate applies to. Most chemical feed pumps have either a length of stroke setting or two settings for frequency of stroke and length of stroke. To determine what settings should be used, a review of the instrumentation on the pump must be conducted.

If two control settings are provided, then set the frequency control at 100% and provide adjustment only to the length of stroke adjustment. The equation to be used to determine at what setting the length of stroke should be, is given below:

Percent length of stroke = gallons per hour (obtained above) x 24 x 100 / the pump capacity in gpd

This numerical setting should be used when adjusting the pump. If both pump settings are to be changed from 100%, then the percent stroke equation is as follows:

Percent length of stroke = gallons per hour x 24 x 100 / stroke frequency / pump capacity in gpd

A check on the actual dosage can be performed by using the total gallons of solution pumped within a known operating period. That information can be used as follows:

$$\text{Actual Dosage} = \frac{\text{gallons of solution x solution strength}}{\text{gallons of water treated in MG}}$$

An easier way to use hypochlorination equipment is to have calibration or volumetric feed cylinders installed on the intake line to the pump. If these cylinders are available, then a known volume of solution can be pumped and the time it takes to pump that volume is used to determine gallons per hour at a known discharge pressure. The actual percent solution must still be known to conduct the other calculations.

Once a utility has implemented emergency chlorination of their system, it is important to conduct follow up distribution chlorine residual monitoring to determine the effectiveness of the chlorination process. In the event of an emergency, hypochlorination equipment should be used to dose the system at 2 ppm of free chlorine residual. Chlorine residual monitoring within the distribution system should take place to verify that an adequate residual is being obtained

at all locations within the distribution system. Any areas which have suppressed chlorine residuals should receive further investigation to determine whether or not there are other problems associated with the reduced residuals.

Flushing should be provided if possible, to draw the chlorinated water into the distribution system as soon as possible.

In addition to the chlorine residual monitoring, bacteriological sampling of the distribution system in all areas should be conducted. Chlorine residual monitoring in addition to bacteriological sampling should be used to further define areas of distribution system that need additional investigation. Chlorination of the system should continue until it has been verified that no structural problems exist within the distribution system and all bacteriological monitoring shows that there is no presence of pathogenic organisms.

TABLE 1

AMOUNT OF CHLORINE PER 100 GALLON BARREL*

Solution Strength	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%
Type of Chlorine											
5% Sodium Hypochlorite**	60 gal	80 gal	100 gal								
12.5% Sodium Hypochlorite**	24 gal	32 gal	40 gal	48 gal	56 gal	64 gal	72 gal	80 gal	88 gal	96 gal	
65% Calcium Hypochlorite***	38 lbs	51 lbs	64 lbs	77 lbs	90 lbs	103 lbs	116 lbs	128 lbs	141 lbs	167 lbs	

* Add the quantity indicated to the 100 gallon barrel and then fill the remaining volume with water.

** The sodium hypochlorite must be ANSI/NSF[1] certified for potable drinking water and approved as direct additive (ANSI/NSF Standard 60).

1: American National Standard Institute (ANSI) or National Sanitation Foundation (NSF)

*** HTH, tablets or granular chlorine

Example: For 10% solution using 12.5% sodium hypochlorite, use 80 gallons of sodium hypochlorite and add 20 gallons of water.

Example: For 10% solution using 65% available Calcium Hypochlorite (CaHOCl), use 128 lbs of granular chlorine and add water to fill barrel and mix.

TABLE 2

CHLORINE VOLUME REQUIRED GALLONS PER DAY (GPD) PER MG/L OR PPM OF DESIRED CHLORINE DOSAGE*

Solution Strength	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%
Flow Rate											
50 gpm	2.4	1.8	1.4	1.2	1.03	0.9	0.8	0.7	0.7	0.6	0.6
75 gpm	3.6	2.7	2.0	1.8	1.5	1.4	1.2	1.0	1.0	0.9	0.8
100 gpm	4.8	3.6	2.9	2.4	2.0	1.8	1.6	1.4	1.3	1.2	1.1
300 gpm	14.4	10.8	8.6	7.2	6.2	5.4	4.8	4.3	3.9	3.6	3.3
500 gpm	24.0	18.0	14.4	12.0	10.3	9.0	8.0	7.2	6.6	6.0	5.5
800 gpm	38.4	28.8	23.0	19.2	16.5	14.4	12.8	11.5	10.5	9.6	8.9
1000 gpm	48.0	36.0	28.0	24.0	20.6	18.0	16.0	14.4	13.1	12.0	11.1
1500 gpm	72.0	54.0	43.2	36.0	30.9	27.0	24.0	21.6	19.6	18.0	16.6
2000 gpm	96.0	72.0	57.6	48.0	41.1	36.0	32.0	28.8	26.2	24.0	22.2

* Values in the Table are the flow rates in gallons of solution per day that be added for each mg/L of desired dosage.

Example: Well Discharge = 1,000 gpm

Solution Strength = 5%

Desired Dosage = 5 mg/L or 5 ppm

From Table 2, Need to add 28.8 gpd per mg/L (or ppm)

Therefore, 5 mg/L x 28.8 gpd/(mg/L) = 144 gpd.

Appendix C

DRINKING WATER FIELD OPERATIONS BRANCH

NOTICE OF CITATION ISSUANCE
PENALTY

BACKGROUND STATEMENT

The State Water Resources Control Board, Division of Drinking Water, issued **Citation No. 03-11-17C-015** for the **CDPR – Hatfield** (Public Water System No. **2410302**).

This Citation carries a penalty of $1,500.00 (one thousand and five hundred dollars).

METHOD OF PAYMENT

Within 90 days of receipt of this Citation, submit a check in the amount of $1,500.00 made payable to:

SWRCB – Division of Drinking Water

and mail to:

SWRCB Accounting Office
ATTN: Drinking Water Program Fees
P.O. Box 1888
Sacramento, CA 95812-1888

(Please indicate the Citation Number on the Check)

(Attach Check Here)